

## REMARKS

This paper is responsive to a Non-Final Office action dated March 14, 2006. Claims 1-44 were examined. Claim 2 has been amended to insert a space between “1” and “wherein.” Non-narrowing amendments have been made to claims 5 – 8 to replace “includes” with “comprises.” Claims 18 and 19 have been amended to cure antecedent basis errors. Claim 25 has been amended to cure an antecedent basis error and to recite “wherein the branch prediction qualifier indication is aliased to multiple branch direction indications.”

### Rejections – 35 U.S.C. §102

Claims 1-7, 9-12, 14, 18, 20-28, 30-34, 36-37, 29-40, 42, and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by White, U.S. Patent No. 5,996,071 (hereafter, “White”). Applicant respectfully traverses all of the rejections.

#### **Office mischaracterizes L1 cache as branch prediction storage**

All of the rejections by the Office rely on characterizing Figure 6b as depicting a branch prediction storage. **However, Figure 2A clearly depicts and White clearly states that the structure 204 is L1 cache.** The L1 cache 204 is distinct from the branch unit 250 as depicted in Figure 2A. Hence, the Office’s interpretation of the L1 cache 204 as branch prediction storage is clearly erroneous, and the different number of entries in the L1 cache 204 and in the branch target cache 252 is irrelevant.

The independent claims 1, 9, 15, 33, and 39 variously recite a branch prediction structure with a greater number of entries for branch direction indications than entries for branch prediction qualifier indications. **White discloses a branch target cache 252 that includes 128 entries with a 1 to 1 correspondence between a valid field and branch history field.** See Figure 6c. White does not disclose or suggest a greater number of branch direction indication entries than branch prediction qualifier indication entries in the branch target cache 252.

The independent claim 25 has been amended to recite “wherein the branch prediction qualifier indication is aliased to multiple branch direction indications.” Again, White discloses a 1 to 1 correspondence between a valid field and a branch history field in the branch target cache

252, and does not disclose or suggest aliasing a branch prediction qualifier indication to multiple branch direction indications.

Independent claim 30 recites “means for sharing branch prediction qualifier indications between multiple branch direction indications” and dependent claim 2 recites “during execution of program code on the processor, at least some of the branch prediction qualifier entries are associated with multiple ones of the branch direction entries.” White does not disclose or suggest sharing a branch prediction qualifier indication between multiple branch direction indications. White does not disclose or suggest associating a branch prediction qualifier entry with multiple branch direction entries.

Applicant respectfully submits that White fails to disclose or suggest any of the above independent claims. All of the independent claims are at least allowable over White. White also fails to disclose or suggest any of the dependent claims depending from corresponding ones of the above allowable independent claims.

*Rejections – 35 U.S.C. §103*

Claims 8, 13, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over White in view of Jain et al., U.S. Patent No. 5,553,255 (hereafter, “Jain”). Claims 35 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over White in view of Smith, U.S. Patent No. 4,370,711 (hereafter, “Smith”). Claims 38 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over White in view of Chang, U.S. Patent No. 5,687,360 (hereafter, “Chang”). Applicant respectfully traverses all of these rejections at least because claims 8, 13, 29, 35, 38, 41, and 43 depend from corresponding ones of the above allowable independent claims.

In summary, claims 1-44 are in the case. All claims are believed to be allowable over the art of record, and a Notice of Allowance to that effect is respectfully solicited. Nonetheless, if any issues remain that could be more efficiently handled by telephone, the Examiner is requested to call the undersigned at the number listed below.

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Respectfully submitted,



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